



## PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference GB2 2002061 PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2003/002871	International filing date (day/month/year) 01 octobre 2003 (01.10.2003)	Priority date (day/month/year) 09 octobre 2002 (09.10.2002)
International Patent Classification (IPC) or national classification and IPC G02F 1/153		
Applicant SAINT-GOBAIN GLASS FRANCE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 26 janvier 2004 (26.01.2004)	Date of completion of this report 04 November 2004 (04.11.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2003/002871

## I. Basis of the report

1. This report has been drawn on the basis of *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments.)*:

- ☐ the international application as originally filed.
- ☒ the description, pages 1-9, as originally filed,  
 pages \_\_\_\_\_, filed with the demand,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the claims, Nos. \_\_\_\_\_, as originally filed,  
 Nos. \_\_\_\_\_, as amended under Article 19,  
 Nos. \_\_\_\_\_, filed with the demand,  
 Nos. 1-12, filed with the letter of 08 July 2004 (08.07.2004),  
 Nos. \_\_\_\_\_, filed with the letter of \_\_\_\_\_.
- ☒ the drawings, sheets/fig 1/2-2/2, as originally filed,  
 sheets/fig \_\_\_\_\_, filed with the demand,  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_,  
 sheets/fig \_\_\_\_\_, filed with the letter of \_\_\_\_\_.

2. The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

4. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1.	Statement			
	Novelty (N)	Claims	4-7, 9, 11	YES
		Claims	1-3, 8, 10, 12	NO
	Inventive step (IS)	Claims	5-7	YES
		Claims	4, 9, 11	NO
	Industrial applicability (IA)	Claims	1-12	YES
		Claims		NO

2. Citations and explanations

1. Citation

This preliminary examination report refers to the following document cited in the international search report; the same numbering will be used throughout the procedure:

D1: FR-A-2 781 084 (SAINT GOBAIN VITRAGE), 14  
January 2000 (2000-01-14)

2. Novelty

The subject matter of claims 1-3, 8, 10 and 12 does not meet the requirement of PCT Article 33(2) for novelty.

3.1 Claim 1

Document D1 describes:

a process for eliminating (page 9, lines 13-19), by means of a laser beam (page 9, line 11), defects located inside a laminated active device (page 9, lines 13-19) comprising a first substrate and a second substrate (page 12, line 27 - page 13, line 10), said laminate comprising at least one active

system which consists of:

- a phase for locating at least one defect inside the active system (this technical feature is implicitly described in that document, since defects must first be located before they are eliminated);
- a defect removal phase which consists in circumscribing the defect by means of the laser beam (page 9, lines 3-12), the defect being removed by electrically isolating the peripheric zone of the defect from the active system in which the defect is located (page 9, lines 3-19).

Although D1 mentions and proposes a solution to prevent leakage currents at the periphery of functional layers, it also suggests the use of the method described to circumscribe and eliminate defects inside the device (page 9, lines 3-7 and 13-16). The claimed process is thus unquestionably anticipated by document D1.

### 3.2 Claim 12

Document D1 also describes:

a glass pane comprising an electrochromic device (4-7) inserted between two electrodes (3, 8), in which all defects are eliminated from the glass pane by a laser that electrically isolates the defective portion (page 9, lines 3-19). In that process, leakage current intensity is divided by a factor from 75 to 100 (page 15, lines 4-6).

Document D1 also anticipates the subject matter of claim 12, which is therefore not novel.

### 3.3 Claims 2, 3, 8 and 10

Document D1 also describes the use of continuous and pulsed lasers (page 14, lines 7-11), as well as the fact that the laser follows the periphery of the defect and thus creates an inactive zone in which the defect is enclosed (page 9, lines 3-7). It therefore anticipates the subject matter of claims 2, 3, 8 and 10.

### 3.4 Claims 4-7, 9 and 11

The subject matter of these claims is novel over the prior art.

## 4. Inventive step

The subject matter of claims 4, 9 and 11 does not involve an inventive step (PCT Article 33(3)).

### 4.1 Claim 4

When the defects that need to be eliminated are optical defects, it is unquestionable that a person skilled in the art would at first try an optical process to repair the defects.

### 4.2 Claim 9

The document suggests selecting the laser wavelength used as a function of the stacking of the device layers (page 14, lines 13-14). When choosing the laser wavelength, a person skilled in the art seeking to achieve maximum efficiency would use a wavelength absorbed by the layer(s) to be affected and to which the substrate is transparent, so as to increase the proportion of useful energy available for the defect removal process.

## 4.3 Claim 11

Since the device described in D1 (page 12, lines 27-28) comprises a plurality of substrates, it is of course possible to choose to implement the removal through the one or the other substrate.

## 4.4 Claims 5-7

Claims 5 and 7 introduce a phase of aiming at the defect. This aiming phase prior to actual defect elimination is not described in the prior art, in particular D1. The object of this aiming phase is that of enhancing the precision of the process by accurately determining the position of the defect. The prior art does not describe the use of a laser beam pulse to achieve this aiming, nor is it obvious to a person skilled in the art. The subject matter of claims 5, 6 and 7 therefore involves an inventive step.